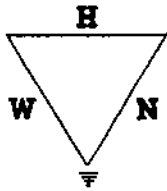


AUG 09 1993



WAGNER, HEINDEL, and NOYES, Inc.

- Consulting Hydrogeologists
- Engineers
- Environmental Scientists

P.O. Box 1629 Burlington, Vermont 05402-1629

802-658-0820

FAX: 802-860-1014

August 6, 1993

Ms. Lynda Wedderspoon, Site Manager
Sites Management Section
Hazardous Materials Management Division
103 South Main Street
Waterbury, VT 05671-0404

RE: Bryan Resident (Site #92-1345)
Williston, Vermont

Dear Ms. Wedderspoon:

Enclosed is our site assessment report providing preliminary assessment of the degree and extend of the contamination from a gasoline UST and piping system at the Bryan residence.

We look forward to your review comments and recommendations for this site. Please call with any questions.

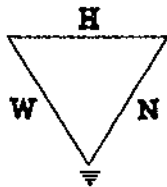
Sincerely,

Dean A. Grover, P.E.
Environmental Engineer

DAG/ral

Enclosure

cc: Alden Bryan



WAGNER, HEINDEL, and NOYES, Inc.

- Consulting Hydrogeologists
- Engineers
- Environmental Scientists

P.O. Box 1629 Burlington, Vermont 05402-1629

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FAX: 802-860-1014

BRYAN RESIDENCE

LEAKING UNDERGROUND STORAGE TANK SITE INVESTIGATION

Prepared by:

Dean A. Grover, P.E.
Environmental Engineer

Reviewed and Approved by:

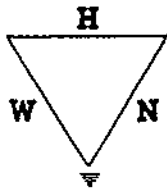
Craig D. Heindel
Senior Hydrogeologist

July 6, 1993

BRYAN RESIDENCE
LEAKING UNDERGROUND STORAGE TANK
SITE INVESTIGATION

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WAGNER, HEINDEL, and NOYES, Inc.

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- Engineers
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P.O. Box 1629 Burlington, Vermont 05402-1629

802-658-0820

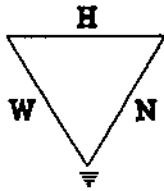
FAX: 802-860-1014

BRYAN RESIDENCE

**LEAKING UNDERGROUND STORAGE TANK
SITE INVESTIGATION**

EXECUTIVE SUMMARY

- 1) Elevated photoionizable detectable (PID) levels of hydrocarbons in soils adjacent to and beneath a 500-gallon gasoline UST, removed in December 1992, prompted further site investigation. Stains in soils and on the tank suggested leakage from pipe fittings on a 1" galvanized steel pipe leading from this tank to the delivery pump. No visible holes were noted in the tank.
- 2) One upgradient and three downgradient monitoring wells installed on the site revealed uniform fine sands, with a water table about 7 - 9 feet below ground surface. No free product was visible in any of the wells.
- 3) Groundwater samples from developed and purged wells revealed low levels of dissolved petroleum hydrocarbons, suggesting a dissolved phased petroleum plume centered approximately beneath a large barn on the property.
- 4) No elevated PID levels were observed in basements or seeps on the parcel. There are no domestic wells actively in use as drinking water sources within 2000 feet of the LUST.
- 5) Excavation and soil-pile treatment of contaminated soils near the leaky underground storage tank (LUST) site is recommended. One additional groundwater and seep sampling round is recommended. Installation of one well further upgradient of the LUST site, on Williston Country Club Golf Course property, may be warranted.



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- Engineers
- Environmental Scientists

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802-658-0820

FAX: 802-860-1014

BRYAN RESIDENCE

**LEAKING UNDERGROUND STORAGE TANK
SITE INVESTIGATION**

1.0 OVERVIEW

Site owner:

Mr. Alden Bryan
68 North Williston Road
Williston, Vermont 05495
Telephone: 878-5566

Tank owner/operator:

Mr. Alden Bryan

**Company performing site
investigation and report:**

Wagner, Heindel, and Noyes
P.O. Box 1629
Burlington, Vermont 05402-1629
Telephone: 658-0820

Rationale for site investigation:

This site investigation is being performed in response to a documented release of gasoline from a suction line attached to a 500-gallon underground storage tank at the Bryan residence.

State notification made:

Three underground storage tanks were removed from the ground at the Bryan residence on December 8, 1992. Notification was made to the UST Program on the same day of tank removal, regarding the release of petroleum products to subsurface soils.

Local authorities notified:

Within approximately 1-2 days of discovery of the pipe leak, the Town Clerk's Office was notified of this release. The notification was made at the same time that information was gathered regarding potential receptors in the vicinity of the tank.

2.0 SETTING AND LAYOUT

The Bryan residence consists of a house and large barn on a 2.5 acre parcel of land located at 68 North Williston Road in Williston, Vermont. The home is located on the east side of North Williston Road, approximately 1,500 feet north of Route 2. The site is located on a portion of the Essex Junction USGS topographic sheet (Attachment 1, page 1).

A 1"=40' site map has been prepared (Attachment 1, page 2), showing the former locations of underground storage tanks (USTs) and locations of the monitoring wells, the Bryan house, and barn, paved and gravel driveways, fences, streams, and culverts. The Bryan residence property is bounded to the north, east, and south by the Williston Country Club golf course. North Williston Road passes along the west side of the property. The Jessman, Glidden, and Lissner residence is located directly across North Williston Road from the Bryan residence.

Two above-ground storage tanks were observed on the Williston Country Club property, including an approximately 1,000-gallon gasoline tank and 500-gallon diesel tank. These tanks are located on the site map.

The 500-gallon, single-walled, steel gasoline tank and diesel tank were located just east of the eastern end of the house/garage. A photograph of the location of these tanks (taken before their removal) shows a small shed attached to the southeast corner of the garage which originally housed the fuel pumps used to dispense fuel from these tanks (Attachment, page 5). Note that a vent pipe is visible in the photograph, just to the right of the shed.

Product suction lines were attached to the top of each tank and extended from the tanks to the pump shed (a distance of only 10-15 feet for the gasoline tank, and 25-30 feet for the diesel tank). These approximately one-inch diameter galvanized pipes were provided with threaded elbows and unions. It appeared from the stains noted on the gasoline tank and on adjacent soils, that a leak developed in either the first elbow or the union of the product line for this tank (see photographs, Attachment, page 5).

A local area map is provided with this report, showing the presence of surface water features (Attachment, page 1). In general, the site is relatively flat-lying, and drainage features are poorly developed. Soils consist of littoral sands and gravels, with high infiltrative capacities.

The moderately densely populated residential area surrounding the study site is served with domestic water and fire flows by the Champlain Water District. Some wells are, however, still active on the Williston Country Club golf course, as further detailed in Section 5.0 of this report.

3.0 SITE HISTORY

Three underground storage tanks were located on the Bryan property prior to their removal on December 8, 1992:

- a 1,000-gallon No. 2 fuel oil tank installed in the 1920s or 1930s;
- a 500-gallon diesel tank installed in the mid-1970s; and
- a 500-gallon gasoline tank, also installed in the mid-1970s.

No evidence of leakage from the tank or associated piping was detected for the 1,000-gallon fuel oil tank and the 500-gallon diesel tank when removed in December 1992.

The gasoline and diesel tanks were installed by Agway and Robinson Fuels, Essex Junction, roughly 1971 - 1974, and were used strictly for fueling of the Bryan's personal vehicles. The Bryans stopped using the gasoline tank in 1978, and the diesel tank in

1982. Subsequent to that date, the tanks remained in the ground, but were free of all but a few gallons of fuel (whatever fuel could not be pumped with the product pumps).

During removal of the gasoline and diesel tanks, both tanks were found to be in good condition, with only minor rust. No heavy rust pitting or holes were observed in either tank. However, as described earlier in this report, product loss from the suction line from the gasoline tank appeared to have occurred from around an elbow or union.

Photoionizable detectable (PID: Photovac Microtip equipped with 10.6 eV probe) levels of volatile organic hydrocarbons were 200-300 in soils adjacent to the gasoline tank wall, increasing to 400 in soils excavated about 1 foot below the bottom of this tank. All contaminated soils were returned to the original tank excavation. These observations are documented on a tank pull form, submitted to the VANR the same day that the tanks were removed (Attachment, pages 7-8).

Although it is not possible to determine exactly how much gasoline was lost, it is likely that only a few tens of gallons were released from the pipe fitting. The suction line from the gasoline tank contained product only during active pumping of fuel from the tank into a motor vehicle. The tank was only used between 1971 and approximately 1978 and was only used to fuel 2 - 3 personal use vehicles. Fuel was likely pumped from the tank no more than once a week. If only a few ounces of fuel were lost during each pumping incident, then the total loss of fuel should not be very high. (Obviously, the amount of fuel lost during each operation of the gasoline pump is the greatest unknown in this discussion.)

If we estimate that two ounces of fuel were lost during each pumping cycle and that the gasoline tank was used 2.5 times, on average, per week for 7 years, then about 1800 ounces, or about 15 gallons of fuel may have been lost.

There is no history of previous release of petroleum products or other hazardous materials at the property.

4.0 SAMPLING AND SCREENING OF SOILS AND GROUNDWATER FOR PETROLEUM HYDROCARBONS

Visible soil staining and elevated PIDs were noted during the tank pull (see tank pull form). To further investigate the extent and degree of contamination, four monitoring wells were installed at the site on February 15, 1993. The wells were installed by Adams Engineering, using 4-inch solid augers. Soils information, including PID levels, were observed from soils retrieved along the auger flights after pulling the augers from the ground without spinning. Therefore, the depths below ground surface noted in the driller's logs and soil logs should be considered approximate (± 0.25 feet). Driller's boring logs and soil logs are attached (Attachment, pages 9-10).

Monitoring well locations were selected to provide one upgradient and three downgradient wells. The presumed groundwater flow direction was toward the southwest when the well locations were selected. The ultimate receiving water for any contamination migrating off the Bryan property was assumed to be Allen Brook, which flows from east to west to the south of the property. There were no surface indications of release of petroleum products (soil stains, vegetation affects, or seeps showing sheens or odors).

Two-inch diameter, flush-threaded PVC wells with 10-foot factory-slotted 0.010 inch screens were installed in the four-inch holes just after removal of the solid augers. Typically, the hole collapsed to just above the water table, and the wells were installed by slowly pushing the PVC pipe to the bottom of the augered hole. Pool filter sand was applied to the annular space between the well and borehole until within approximately 1½ feet of the ground surface, whereupon a bentonite seal was installed to the ground surface.

Soils encountered from the ground surface to a maximum depth of 15 feet below ground surface were uniform fine sands with occasional thin silt lenses ($< \frac{1}{2}$ " thick) in all bore holes. There was no evidence of an aquiclude that would suggest the presence of a shallow confined aquifer beneath the site. No basal till or bedrock was encountered in any borehole. A 1.5 to 2.0 foot stickup was provided for each well.

In the spring, after the frost had left the ground, all wells were cut flush to the ground surface, and eight-inch diameter curb boxes were installed. This work was conducted on May 8, 1993.

A water table map was constructed, after measuring depths to groundwater in each well on June 16, 1993 (map: Attachment, page 4). The contour map shows a groundwater flow direction in the shallow unconfined aquifer toward the west-southwest, with a gradient of 0.014 feet per foot.

On the same day as well installation, we used a peristaltic pump to slowly extract groundwater from each well, purging until all silt and fine sand was removed. All wells developed without difficulty, and yielded clear water after approximately 30 minutes of pumping.

On February 23, 1993, all wells were checked for floating free product with a decontaminated clear teflon bailer, and were then evacuated of at least three well volumes before obtaining groundwater samples. Although slight petroleum odors were noted in all wells, no free product or sheens were noted in any wells. Samples obtained for EPA Method 8240 analysis of volatile organic compounds were collected in 40 ml VOA vials and preserved with sodium azide and ice. Samples collected for total hydrocarbon analyses (EPA Method 418.1) were preserved by refrigeration with ice.

Laboratory reports and chains-of-custody are provided for both the volatile organic analyses and total hydrocarbon analyses (Attachment, pages 11-21). Analytical results have been plotted on two base maps of the site to show the distribution of BTEX constituents and total hydrocarbons (Attachment, pages 2-3).

The highest level of total BTEX compounds was found in monitor well MW-2 in the front yard of the Bryan residence, at 1,237 parts per billion (ppb). The only detectable level of total hydrocarbons found in all four wells (EPA Method 418.1) was observed at a level of 5.9 parts per million (ppm) in MW-2.

The distribution of contamination at the site is somewhat puzzling. We expected to see the highest levels of contamination in monitor well MW-4, located just downgradient of the

500-gallon gasoline tank. Alternatively, the highest levels are observed in MW-2 on the front lawn of the Bryan residence, 120 feet west of the leaking underground storage tank location. In fact, the levels observed in MW-4 are only slightly higher than the "background" levels measured in MW-1. We postulate, from the limited subsurface data, that the low-level dissolved BTEX plume released from the tank flowed southwest with groundwater over time. After pumping of fuel from the tank ceased in 1978, no gasoline was released from the suction piping, and the contaminant source was "turned off". This plume "pulse" then migrated downgradient, and is now likely centered beneath the large barn on the site. Relatively high levels in MW-2 are likely a measurement of the northwest portion of this southwest-flowing plume under this scenario. The lack of any significant contamination in MW-3 shows that the plume has not yet reached this downgradient point, and has essentially not left the property.

5.0 INITIAL RISK EVALUATION

To assess potential and actual impacts to releases from the leaky underground storage tank (LUST), we analyzed for measurable PID levels of contamination in surface water seeps, in nearby basements, and domestic water wells within a 1,000-foot radius of the LUST (field data: Attachment, pages 22-25).

PID measurements of VOCs released from the seepage face located to the south of the barn showed no detectable volatile organic compounds in these seeps.

Field analysis of airborne levels of VOCs along the basement wall of the large barn located 70 feet south of the LUST showed no elevated levels of volatile organic compounds. We also screened for volatile organic compounds in the basement of the house, and found no levels elevated above background conditions (slightly elevated levels were observed within 1-inch of a small fuel oil stain on the concrete floor beside an oil-fired boiler).

A domestic well sensitive receptor survey was performed within a 1,000-foot radius of the LUST. The survey was initialized by collecting and plotting all well logs available from the Water Supply Section of the Agency of Natural Resources (index of logs and copies of

logs: Attachment, pages 26-36). A follow-up door-to-door survey was performed to check the accuracy of the well logs, and to interview homeowners about their current source of domestic drinking water. The only homes not visited within the 1,000-foot radius are those new homes in the development along Lefebvre Lane, 600 feet southeast of the Bryan home, which all receive water from the Champlain Water District. All wells are located on a USGS blow-up (Attachment, page 37). Results of the door-to-door survey are also provided (Attachment, pages 38-41).

Although many old homes exist along North Williston Road and have dug or drilled wells, we learned that all residents along the road use the Champlain Water District municipal water supply as a domestic drinking water source.

The only wells in active use as a water source are located on the Williston Country Club golf course. These wells are located on a USGS topographic map (Attachment, page 1). Three wells are located on the Williston Country Club golf course. One well, (labelled #1 on the map) installed in the early 1960s was drilled to a total depth of approximately 300 feet and has a driller's estimated yield of 25-30 gallons per minute (gpm). This well supplies water to the Country Club and a few private homeowners nearby. A second well, (labelled #2 on the map) drilled in 1988 to a depth of 490 feet, provides an estimated yield of 25 gpm. This well is used strictly as a source of irrigation water for the golf course. A third well (well #3)

was originally installed at the residence of Ben Murray, and is now located on the golf course. This well, installed in the early 1960s (a year or two after the Clubhouse well was drilled), yields 10-15 gpm and has a total depth of approximately 300 feet. Following are distances and compass direction to each of these wells from the LUST site:

WELL ID#	DISTANCE (ft)	DIRECTION
1	2,200	Southeast
2	2,100	East
3	3,400	Southeast

The three wells located on the golf course are considered cross-gradient or upgradient to the LUST, and are sufficiently distant from the LUST so that short-term or long-term threats are not significant.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Preliminary analysis of the degree and extent of contamination has been accomplished by PID evaluation of soils within the tank excavation, seeps, and air in nearby basements, and by laboratory analysis of groundwater samples obtained from four monitoring wells. These results indicate the presence of petroleum hydrocarbons in the subsurface soils at the Bryan residence. Levels of 200-400 were observed with a Photovac Microtip in soils directly beneath the LUST. However, laboratory analysis of groundwater samples shows only very low levels of petroleum hydrocarbons in this medium.

The highest levels of dissolved petroleum products (total BTEX and total hydrocarbons) were observed in monitor well MW-2, located 130 feet in a roughly downgradient direction from the LUST. This finding suggests that the centroid of the low-level dissolved hydrocarbon plume has migrated downgradient. The centroid of the plume is likely beneath the large barn on this site. The fact that no significant levels of hydrocarbons are observed in MW-3 (no levels above those observed in our trip blank) implies that the plume has not reached this point on the site.

The small, intermittent brook that flows from a seepage face near the southeast corner of the parcel is the likely surface water receptor for any migrating hydrocarbons. It appears, from the relative elevation of the groundwater contours to the elevation of this creek bed, that the brook is losing water over most of its course, but is obviously gaining water at the seepage face. No PID detectable hydrocarbons were observed in this seepage face.

Installation of additional wells along the south side of the barn, and possibly between the barn and the house, would better define the geometry and magnitude of the plume. However, we feel that the existing "sparse" monitoring well network sufficiently indicates that the levels of dissolved hydrocarbons in the aquifer are very low and appear not to

extend beyond the Bryan property. Moreover, our sensitive receptor survey shows no indications of volatile organic compounds in basements of the barn or the house, or the small brook along the south side of the property.

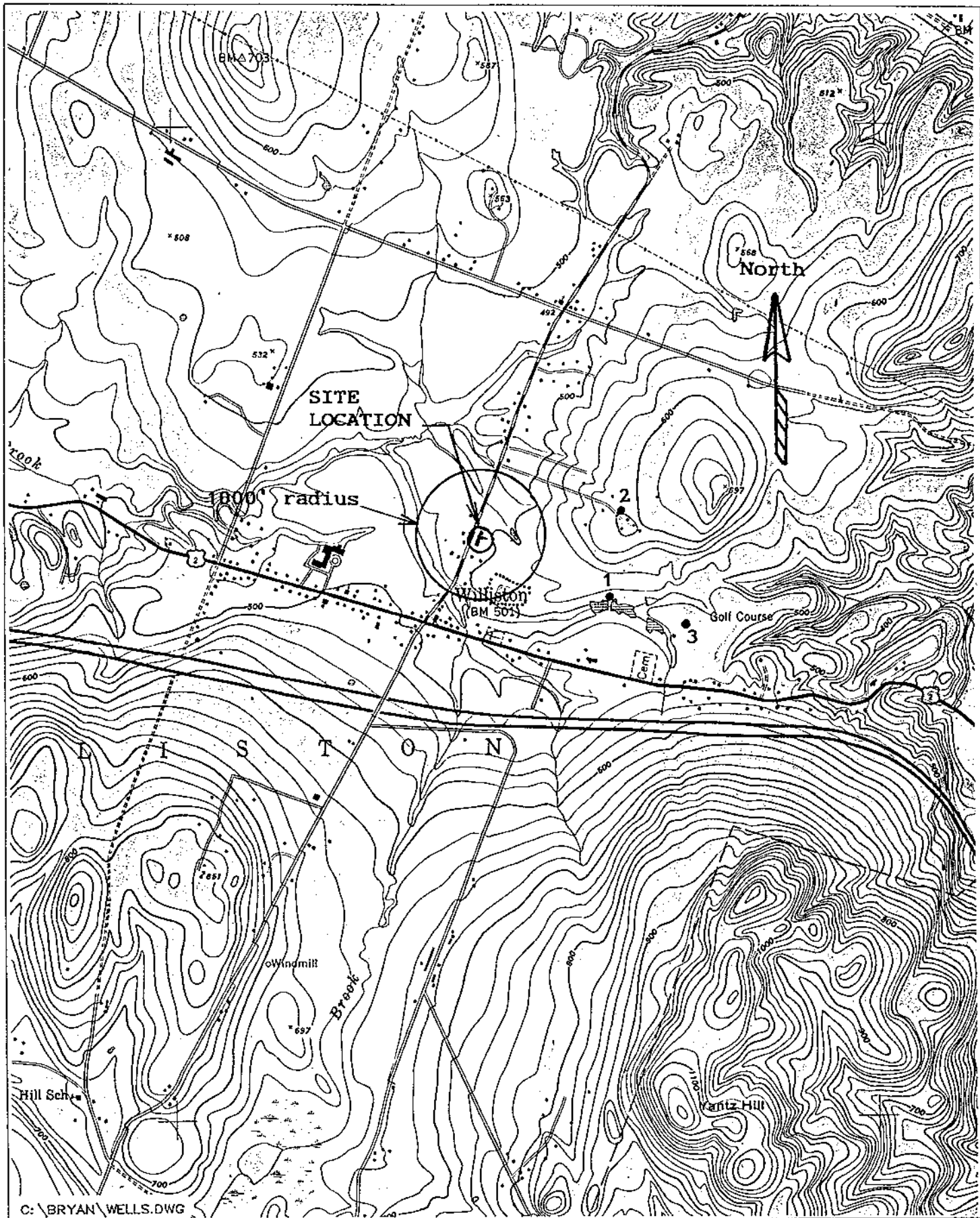
There are no domestic wells in use along North Williston Road, as all old wells at these homes have been replaced by Champlain Water District connections. The closest bedrock well in use for domestic water is on the Williston Country Club golf course at a distance of 2,100 feet in an easterly (cross-gradient) direction from the LUST. We feel that there is no significant threat to this domestic water source (and other more distant wells at the Country Club) from the low levels of petroleum products released by the LUST at the Bryan site.

We recommend that the following remedial activities and monitoring activities occur at this site:

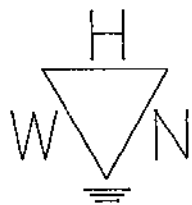
1. Soils contaminated by gasoline in the vicinity of the removed LUST should be excavated from the ground and remediated using biological degradation and vapor extraction techniques in a double-lined and covered soil pile. By covering the pile and treating all vapor extraction system effluent gases with granular activated carbon, we can insure that the contamination removed from this soil is not simply transferred to the atmosphere. The double liner beneath the soil treatment pile will insure that contamination does not migrate into the subsurface. We recommend that this work be done during the summer of 1993.
2. We recommend one additional round of sampling of all four monitoring wells at the site, and of the seep near the southeast corner of the property. Each sample should be analyzed for EPA Method 8020 analytes (petroleum hydrocarbons only), since we have determined that chlorinated solvents are not present on the property.
3. It may be prudent to install one additional well upgradient of monitor well MW-1, since this "background" well does contain low residuals of petroleum hydrocarbons. It is not clear at this writing whether these hydrocarbons are derived from the 500-gallon gasoline tank, or from upgradient sources on the Williston Country Club

golf course. Underground storage tanks are believed to have been in use at the Country Club in the past, and may have released the very low levels of petroleum products that were detected in MW-1.

[RPT-BRYANDAG 6-3-03]



C:\BRYAN\WELLS.DWG



Wagner, Heindel, and Noyes

CONSULTING SCIENTISTS AND ENGINEERS

- Hydrogeology • Ecology •
- Environmental Engineering •

BURLINGTON, VERMONT

BRYAN RESIDENCE

WILLISTON,

VERMONT

SITE LOCATION MAP

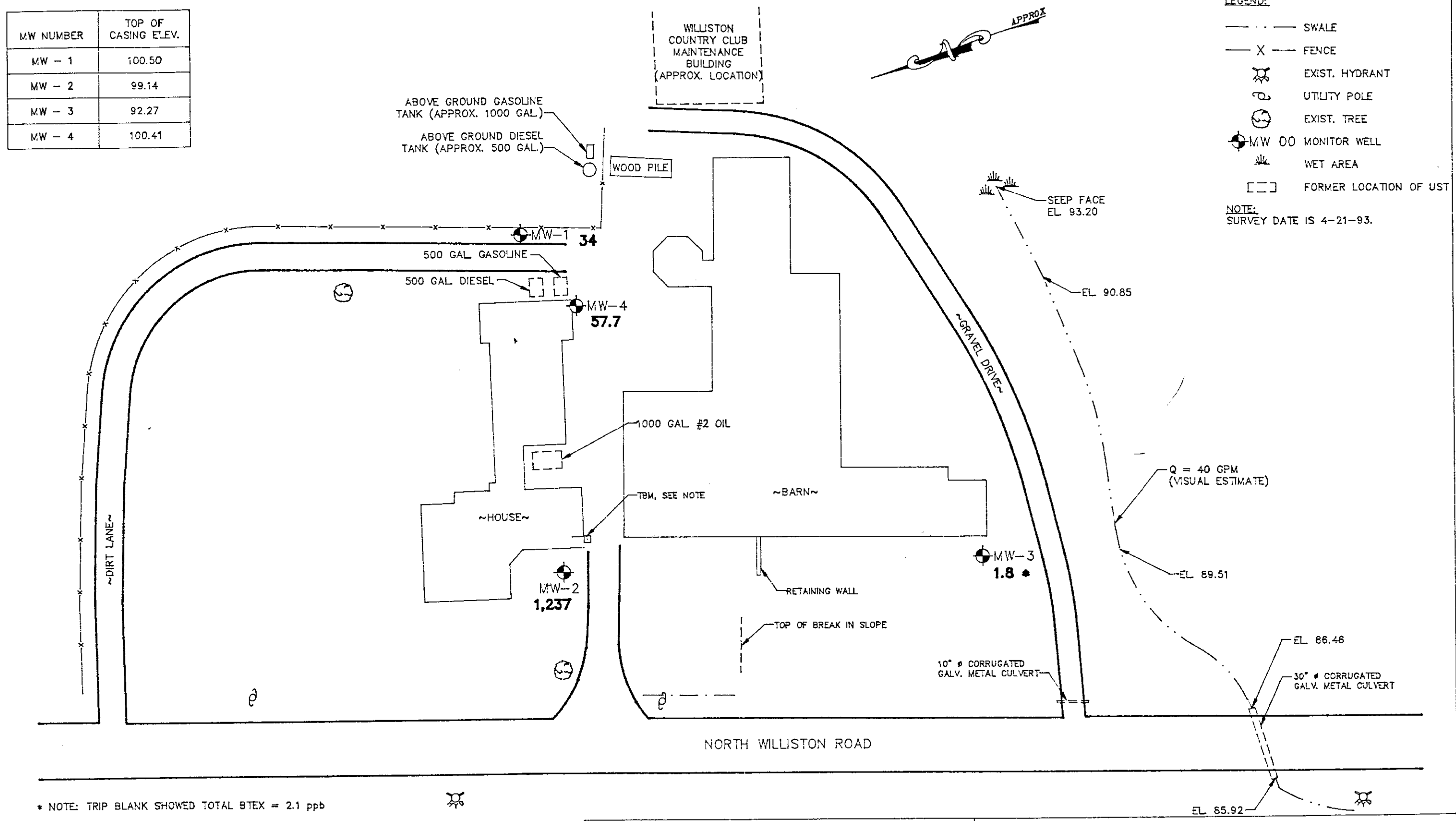
DATE: 6/30/93 SCALE: 1:24000 DRN: MRL APPD: MRM

M.W. NUMBER	TOP OF CASING ELEV.
MW - 1	100.50
MW - 2	99.14
MW - 3	92.27
MW - 4	100.41

LEGEND:

- SWALE
- X- FENCE
- ⊗ EXIST. HYDRANT
- ⊕ UTILITY POLE
- ⊙ EXIST. TREE
- ⊙ MW 00 MONITOR WELL
- ⊕ WET AREA
- [] FORMER LOCATION OF UST

NOTE:
SURVEY DATE IS 4-21-93.



* NOTE: TRIP BLANK SHOWED TOTAL BTEX = 2.1 ppb

TBM:
SOUTHWEST CORNER OF HOUSE,
TOP OF CONCRETE SLAB AT
BASE OF PORCH STEPS

ALL CONCENTRATIONS IN PARTS
PER BILLION (ppb).

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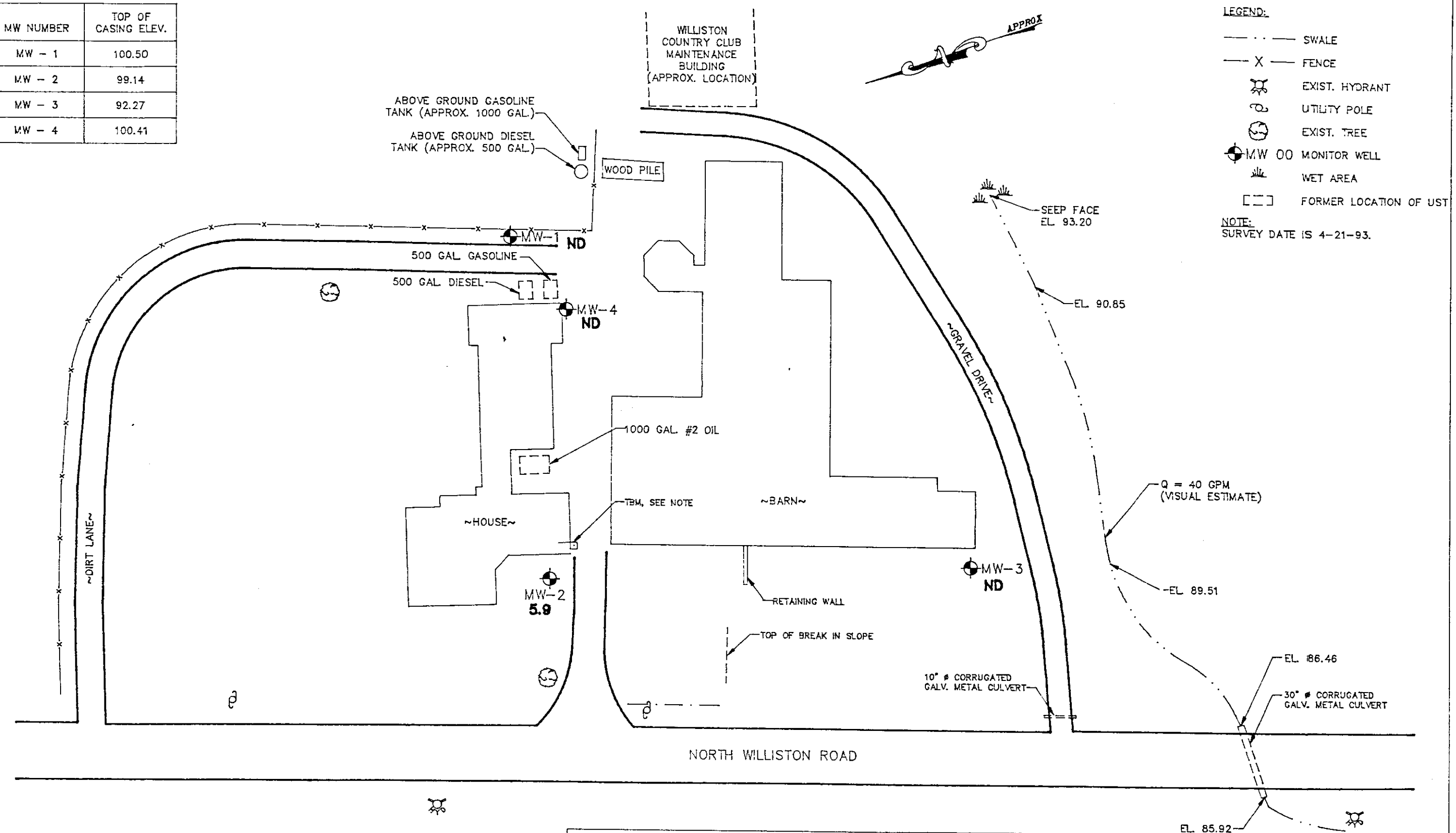
BRYAN RESIDENCE

WILLISTON, VERMONT

TOTAL BTEX CONTOUR MAP - FEB. 23, 1993

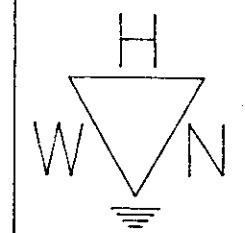
DATE: 6/21/93	SCALE: 1"=40'	DRN: DDH	APPD: MRM
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MW NUMBER	TOP OF CASING ELEV.
MW - 1	100.50
MW - 2	99.14
MW - 3	92.27
MW - 4	100.41



- LEGEND:**
- SWALE
 - X- FENCE
 - ⊗ EXIST. HYDRANT
 - ⊙ UTILITY POLE
 - ⊗ EXIST. TREE
 - ⊗ MW 00 MONITOR WELL
 - ⊗ WET AREA
 - [] FORMER LOCATION OF UST
- NOTE:**
SURVEY DATE IS 4-21-93.

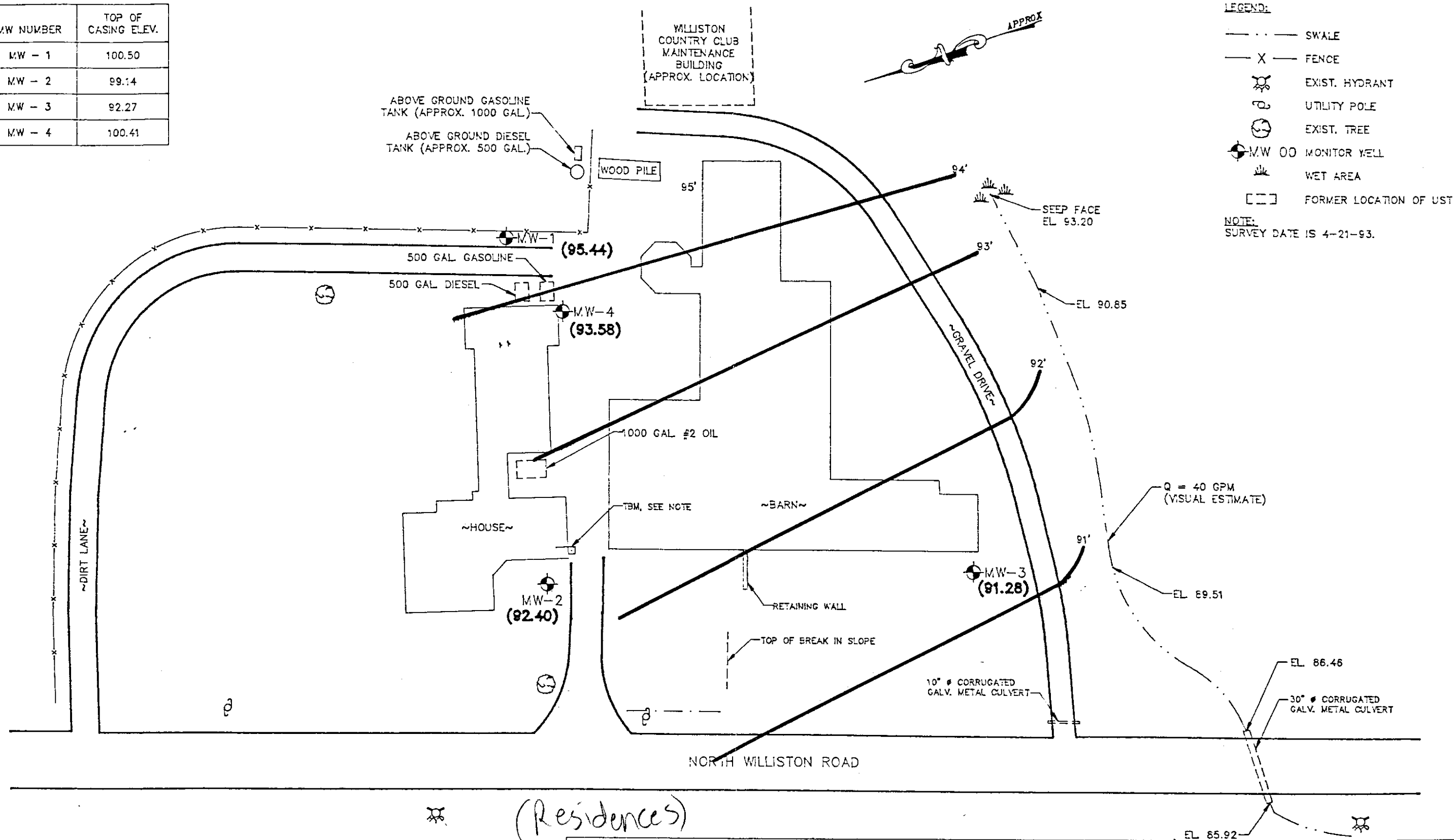
TBM:
SOUTHWEST CORNER OF HOUSE,
TOP OF CONCRETE SLAB AT
BASE OF PORCH STEPS



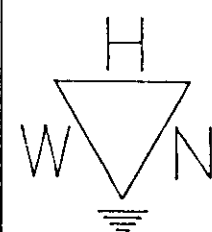
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WILLISTON,		VERMONT	
BRYAN RESIDENCE			
TOTAL HYDROCARBONS - FEB. 23, 1993			
DATE: 6/21/93	SCALE: 1"=40'	DRN: DDH	APPD: MRM

MW NUMBER	TOP OF CASING ELEV.
MW - 1	100.50
MW - 2	99.14
MW - 3	92.27
MW - 4	100.41



C:\BRYAN\SITEPLAN.DWG



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BURLINGTON, VERMONT

BRYAN RESIDENCE

WILLISTON,

VERMONT

WATER TABLE CONTOUR MAP — JUNE 16, 1993

DATE: 6/21/93 SCALE: 1"=40' DRN: DDH APPD: MRM

7

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05671-0404
(802) 244-8702

Date of Removal: 8 DEC 1992 Date of Assessment: 8 DEC 1992
Person & Company Doing Assessment: DEAN GROVER WAGNER, HEINDEL & NOYES
Telephone Number: 658-0820

Business Name Where Tank(s) Located: RESIDENCE OF ALDEN BRYAN
Number of Employees: 0
Street Address & Town/City: 68 NO. WILLISTON RD.
WILLISTON, VT 05495

Owner of Tank(s): SAME
Address:
Town/City:

Contact Person: D. GROVER
Phone Number: 658-0820

UST Facility ID Number: N/A

Tank #	Product	Size	Condition
1	<u>NO. 2 FUEL OIL</u>	<u>1000</u>	<u>GOOD</u>
2	<u>GASOLINE</u>	<u>500</u>	<u>GOOD - LINE LEAK</u>
3	<u>DIESEL FUEL</u>	<u>500</u>	<u>GOOD</u>
4			

Reason for Tank Removal (check one): ☒ abandoned ☐ routine replacement
☐ tank or piping leaking ☐ liability

Replacement Tank(s)? ☐ yes ☒ no Number of Replacement Tanks: 0

DEC UST Permit(s) Obtained? ☐ yes ☐ no

DEC-Permitted Tank(s) Still On-Site? ☐ yes ☒ no Number of Tanks: 0

Out of Service Tank(s) On-Site? ☐ yes ☒ no Number of Tanks: 0

Heating Oil Tank(s) On-Site? ☒ yes ☐ no No. of Tanks: 2 Size(s): 175 GAL
IN BASEMENT

Any Waste Pumpage? ☒ yes ☐ no Estimated Volume: 18 GAL. FUEL OIL, 20 GAL DIESEL,
Transported By: JIM SHIPPEE 32 GAL GASOLINE

GASOLINE TANK ONLY:
Size of Excavation (ft²): 75 Depth: 5 FT Soil Type: FINE SAND
Concentrations Detected with PID: Peak = 450 Average = 200

Type of PID: PHOTOVAC MICROMP

Number of Readings (please put locations on attached drawing): 10

Calibration Info. (date, time, type of gas): 8 DEC 92, 10 AM; ISOBUTYLENE
100 PPM

Free Phase Product Encountered? ☐ yes ☒ no Approx. Amount: ---

Cont. Soils Stockpiled? ☐ yes ☒ no Amount (yd³): 0

Cont. Soils Backfilled? ☒ yes ☐ no Amount (yd³): < 1

Groundwater Encountered? ☐ yes ☒ no Depth to Groundwater: ~ 12 FT

Monitoring Wells Installed? ☐ yes ☒ no Number: --- Screen Depth: ---

On-Site Drinking Well? ☐ yes ☒ no (if yes: ☐ rock ☐ gravel ☐ spring)

Public Water Supply Well(s) Within 1/4 Mile? ☐ yes ☒ no

Distance to nearest: ---

Private Water Supply Well(s) Within 1/4 Mile? ☒ yes ☐ no How Many? 1 (?)

Samples Collected for Laboratory Analysis? ☐ yes ☒ no How Many? ---

(check all that apply: ☐ soil ☐ groundwater ☐ drinking water)

Receptors Affected (check all that apply):

☒ soil ☐ residential; # of houses/people: ---

☐ groundwater ☐ surface water; name/type of water body: ---

(NOT DETERMINED)

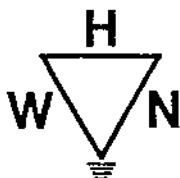
Signature of Owner or Authorized Representative: Dean Grover

Date: 8 DEC 92

Signature of Person Performing Site Assessment: Dean Grover

Date: 8 DEC 92

*** ATTACH OBSERVATIONS, CONCLUSIONS, AND DRAWING ON A SEPARATE PAGE ***



Wagner, Heindel, and Noyes, Inc.

Consulting Geologists

Burlington, Vermont

8

Page No.

PAGE 1 OF 1

PROJECT: BRYAN TANK PULL

DATE: 8 DEC 1992

BRYAN TANK PULL, WILKISTON, VT.

OBSERVATIONS & CONCLUSIONS

NO LEAKS OR ELEVATED PID'S NOTED IN TANKS,
PIPES & SURROUNDING SOILS FOR 1000 GALLON No. 2 FUEL
OIL AND 500 GALLON DIESEL TANK.

LEAKY SUCTION PIPE HAS CAUSED CONTAMINATION IN
IMMEDIATE VICINITY OF 500 GALLON GASOLINE TANK.

PID READINGS (MICROTIP) WERE 200-300 IN SOILS
ADJACENT TO TANK WALL, INCREASING TO 400 IN
SOILS ONE FOOT BELOW BOTTOM OF TANK. WATER TABLE
WAS NOT ENCOUNTERED, BUT BELIEVED TO BE 10-12 FEET
BGS. FINE SANDY SOILS WERE NOTED TO 6 FT BGS.

CLOSEST KNOWN DOMESTIC WELL IS AT THE WILKISTON
COUNTRY CLUB, ABOUT 1/4 MILE UPGRAIENT (NORTHEAST).

THE WELL HEAD FOR THIS BEDROCK WELL IS ABOUT VERTICAL
FEET ABOVE THE LUST.

Dean A. Grover

DEAN A. GROVER, P.E.

ADAMS ENGINEERING
Gerard Adams
RD #1, Box #3700
Underhill, Vt. 05489
899-4945 FAX 899-4376

February 15, 1993

Mr. Dean Grover PE
Heindel & noyes.

The following are the boring logs for the Aldan Bryan/Williston project conducted under your direction: Soils information from solid auger cuttings.

2/15/93 MW #1 Next to split rail fence.

SOILS WELL

- +1.5' Top of well 2" PVC Pyramid, typ.
- 0>-5' Light brown medium & fine sand.
- .5' Top of grout.
- 2.5' Bottom of grout top of sand pack, placed in open borehole. Holes typically collapse at just above water table.
- 3.5' Top of well screen 2 X 10' X .010" slot Pyramid WHN, typ.
- 5>9.9' 3 X 60" Split spoon, saturated brown fine sand trace silt.
- 9.9>15' Saturated brown fine sand trace silt.
- 13.4' Bottom of screen.

Developed with peristaltic pump with silicone pump & Vinal suction ho clean good flow, all wells.

MW #2 In front of house.

- +2+-' Top of well.
- 0>-5' Light brown fine sand.
- .5' Top of grout.
- 3.2' Bottom of grout top of sand pack.
- 4.2' Top of well screen 10'.
- 5>15' Saturated brown fin sand.
- 14.1' Bottom of screen.

MW #3 Font south west corner of barn.

- +2' Top of well.
- 0>-6' Black organic loam.
- .5' Top of grout.
- 2.0' Bottom of grout top of sand pack.
- 3.0' Top of well screen 10'.
- 6>12+-' Saturated brown fine sand.
- 12>15' Saturated gray fine sand.
- 12.9' Bottom of screen.

MW #4 South east corner of garage. Not logged from memory??

- +2+-' Top of well.
- 0>-2' Rubble fill.
- .5' Top of grout.
- 2' Bottom of grout top of sand pack.
- 2>5' Well oxidized medium sand over brown fine sand.
- 3' Top of well screen 10'.
- 5>10' Saturated brown fine sand trace silt.
- 13' Bottom of screen.

-Gerard Adams

Gerard Adams

SOIL BORING LOG
Bryan Residence
Williston, Vermont

June 23, 1993 Page 1

These soil boring logs were prepared by Dean A. Grover, P.E. of Wagner, Heindel, and Noyes, Inc. during installation of monitoring wells by Adams Engineering on February 15, 1993. A Photovac Microtip equipped with a 10.6 eV probe was used to screen soils for petroleum hydrocarbons.

All wells were installed using 4-inch solid augers; soils were identified after examination on auger flights.

For information on well construction, see drillers' logs.

MW-1 (background well at eastern property boundary)

5.0 - 7.2'	Medium brown interbedded fine sands and silts in approximately 1 - 1½" beds; moist
7.2 - 8.3'	Medium to dark brown medium sand; well sorted; saturated
	7.0 - 7.5' PID = 500 to 550 (maximum reading) PID of freshly augered hole = 39.6

MW-2 (location - front lawn of Bryan Residence)

0 - 5'	Bright orange and tan fine sand and silt; dry to slightly moist
5 - 15'	Dark brown silt at fine sand. Water table at approximately 9'. 6 - 7' PID = 0.8 (maximum reading) 14' PID = 212 (maximum reading)

MW-3 (location - near southwest corner of barn)

0 - 5'	Black and grey organic silt with medium sand; moist
5 - 15'	Black organic rich muck; saturated; light grey fine sand horizon at 12' (0.5' thick) 10 - 15' PID = 6.5 (maximum reading)

MW-4 (location - just downgradient of LUST)

0 - 5'	Light tan very fine sand and silt; dry PID = 5
5 - 15'	Medium to dark brown fine sand and silt; wet PID = 83 (maximum reading)



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
REPORT DATE: March 10, 1993
DATE SAMPLED: February 23, 1993

PROJECT CODE: HNT1302
REF.#: 42,601 - 42,606

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody indicated samples were preserved with sodium azide.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

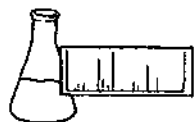
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

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LABORATORY REPORT**EPA METHOD 8020 -- PURGEABLE AROMATICS**

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
REPORT DATE: March 10, 1993
DATE SAMPLED: February 23, 1993
DATE RECEIVED: February 23, 1993
ANALYSIS DATE: March 8, 1993

PROJECT CODE: HNTPI302
REF.#: 42,603
STATION: MW 1
TIME SAMPLED: 2:10
SAMPLER: C. Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	9.5
Xylenes	1	24.9
MTBE	1	ND

Bromobenzene Surrogate Recovery: 84%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 22

NOTES:

1 None detected

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LABORATORY REPORT**EPA METHOD 8020 -- PURGEABLE AROMATICS**

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
REPORT DATE: March 10, 1993
DATE SAMPLED: February 23, 1993
DATE RECEIVED: February 23, 1993
ANALYSIS DATE: March 10, 1993

PROJECT CODE: HNTPI302
REF.#: 42,604
STATION: MW 2
TIME SAMPLED: 1:30
SAMPLER: C. Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)¹</u>	<u>Concentration (ug/L)</u>
Benzene	5	30.0
Chlorobenzene	5	ND ²
1,2-Dichlorobenzene	5	ND
1,3-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Ethylbenzene	5	ND
Toluene	5	6.7
Xylenes	5	1,230.
MTBE	5	38.5

Bromobenzene Surrogate Recovery: 91%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >25

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at 20% dilution.

2 None detected



ENDYNE, INC.

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LABORATORY REPORT

EPA METHOD 8020 -- PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
REPORT DATE: March 10, 1993
DATE SAMPLED: February 23, 1993
DATE RECEIVED: February 23, 1993
ANALYSIS DATE: March 8, 1993

PROJECT CODE: HNT1302
REF.#: 42,605
STATION: MW 3
TIME SAMPLED: 1:15
SAMPLER: C. Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	1.8
MTBE	1	ND

Bromobenzene Surrogate Recovery: 97%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

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LABORATORY REPORT**EPA METHOD 8020 -- PURGEABLE AROMATICS**

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
REPORT DATE: March 10, 1993
DATE SAMPLED: February 23, 1993
DATE RECEIVED: February 23, 1993
ANALYSIS DATE: March 8, 1993

PROJECT CODE: HNT1302
REF.#: 42,606
STATION: MW 4
TIME SAMPLED: 1:50
SAMPLER: C. Aldrich

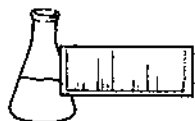
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	36.5
Xylenes	1	21.2
MTBE	1	ND

Bromobenzene Surrogate Recovery: 86%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >25

NOTES:

1 None detected

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LABORATORY REPORT**EPA METHOD 8020 -- PURGEABLE AROMATICS**

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
REPORT DATE: March 10, 1993
DATE SAMPLED: February 23, 1993
DATE RECEIVED: February 23, 1993
ANALYSIS DATE: March 8, 1993

PROJECT CODE: HNT1302
REF.#: 42,602
STATION: Field Blank
TIME SAMPLED: 2:00
SAMPLER: C. Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	1	ND

Bromobenzene Surrogate Recovery: 92%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

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LABORATORY REPORT**EPA METHOD 8020 -- PURGEABLE AROMATICS**

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
REPORT DATE: March 10, 1993
DATE SAMPLED: February 23, 1993
DATE RECEIVED: February 23, 1993
ANALYSIS DATE: March 10, 1993

PROJECT CODE: HNT1302
REF.#: 42,601
STATION: Trip Blank
TIME SAMPLED: 12:00
SAMPLER: C. Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	2.1
MTBE	1	ND

Bromobenzene Surrogate Recovery: 84%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

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EPA METHOD 8020 LABORATORY REPORTMATRIX SPIKE AND DUPLICATE LABORATORY CONTROL DATA

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
REPORT DATE: March 10, 1993
DATE SAMPLED: February 23, 1993
DATE RECEIVED: February 23, 1993
ANALYSIS DATE: March 10, 1993

PROJECT CODE: HNT1302
REF.#: 42,601
STATION: Trip Blank
TIME SAMPLED: 12:00
SAMPLER: C. Aldrich

<u>Parameter</u>	<u>Sample(ug/L)</u>	<u>Spike(ug/L)</u>	<u>Dup1(ug/L)</u>	<u>Dup2(ug/L)</u>	<u>Avg % Rec</u>
Benzene	0	10	10.2	13.0	116%
Toluene	0	10	11.2	13.5	123%
Ethylbenzene	0	10	11.3	13.3	123%
Xylenes	2.1	30	34.0	39.4	116%



ENDYNE, INC.

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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel and Noyes, Inc.
PROJECT NAME: Bryan Tank Pull
DATE REPORTED: March 4, 1993
DATE SAMPLED: February 23, 1993

PROJECT CODE: HNT1303
REF. #: 42,607 - 42,610

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody did not indicate sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Suzanne Giddis for Harry Locker

Harry Locker, Ph.D.
Laboratory Director

enclosures

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FAX 879-7103

LABORATORY REPORT**TOTAL HYDROCARBONS - EPA METHOD 418.1 (WATER)**

CLIENT: Wagner, Heindel and Noyes, Inc.

REPORT DATE: March 4, 1993

PROJECT NAME: Bryan Tank Pull

PROJECT CODE: HNTF1303

DATE SAMPLED: February 23, 1993

DATE RECEIVED: February 23, 1993

DATE ANALYZED: February 25, 1993

SAMPLER: Chris Aldrich

<u>Reference #</u>	<u>Sample ID</u>	<u>Conc. (mg/L)¹</u>
42,607	MW 1; 2:10	ND ²
42,608	MW 2; 1:30	5.9
42,609	MW 3; 1:15	ND
42,610	MW 4; 1:50	ND

Notes:

1 Method detection limit is 0.8 ppm

2 None detected

CHAIN-OF-CUSTODY RECORD

006030

Project Name: BRYAN TANK Pull	Reporting Address: WHV	Billing Address: WHV
Site Location: Williston, VT	Company: WHV	Sampler Name: C. Aldrich
Endyne Project Number:	Contact Name/Phone #: D. Grover 658-0820	Phone #: 658-0820

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	Trip Blank	H ₂ O	X		2/23/93 12 ⁰⁰	2	40mL		8020	11445 4°	
	field Blank				2 ⁰⁰						
	MW 1				2 ¹⁰						
	MW 2				1 ³⁰						
	MW 3				1 ¹⁵	↓	↓		↓	↓	
	MW 4				1 ⁵⁰	2	40mL		8020	11445 4°	
	MW 1				2 ¹⁰	2	1 liter		418.1	40	
	MW 2				1 ³⁰	↓	↓		↓	↓	
	MW 3				1 ¹⁵	↓	↓		↓	↓	
	MW 4				1 ⁵⁰	2	1 liter		418.1	40	

Relinquished by: Signature <i>Chris Aldrich</i>	Received by: Signature <i>11 P. [Signature]</i>	Date/Time <i>2/23/93</i>
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD ₅	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

BRYAN Tank Pull-Microtip Survey

5-7-93

MILLER

Sunny, warm, clear, 70°F

Station Event Output

Barn - Wet spots

Microtip - Battery newly charged

Calibrated @ office in late a.m. 0 ppm

412P Background (N. of barn, outside) 226, 0 ppm

415 Background (inside barn, lower level, ambient) 227, 0

419 Wet spot, concrete 228, 0

420 In crack along south wall 229, 0.1

421 Wet spot on floor, middle 230, 0

424 Wet spot middle of concrete 231, 0

425 Dirt floor, along fieldstone wall 232, 0

427 In middle of concrete floor, wet spot 233, ?

431 Middle of south leg, wet spot 234, ?

Spot on concrete floor

433 NE side, base fieldstone wall 235, ?

General notes: Concrete slab generally wet in spots but v. little ponding (1/8" deep); presumably from GW seepage. No smell of gas in barn.

?- Too dark to read Microtip.

BRYAN Tank Pull-Microtip Survey

5-7-93

Event Output

MILLER

* Oil furnace 1.2 ppm

GW drain tile 241 0.9 ppm 5:30P

Paint section 242 0.8 ppm 5:31

Ambient basement 0 ppm

* Oil furnace changed 3-4 wks ago
Small amount of oil spilled

~ 5:30P

Slit off 236-243

1.4 by oil furnace tank

BRYAN RESIDENCE
NO. WILLISTON ROAD
WILLISTON, VT
MAY 7, 1993

LOCATION #1: BARN, LOWER LEVEL (BOAT STORAGE AREA)

Photovac MicroTIP Statistical Monitoring Report

? Averaging Interval: 1 Readings?

15 Seconds??

Date	Time	Min	Avg	Max	Event	Status	Notes
May 07,93	16:12	0.0	0.0	0.0	226	Ready	

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

16:13 0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

16:14 0.0 0.0 0.0

227 Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

16:15 0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

16:16 0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

16:17 0.0 0.0 0.0

228 Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.1

Ready

0.0 0.0 0.1

Ready

16:18 0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.1

Ready

0.0 0.0 0.0

229 Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

16:19 0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

0.0 0.0 0.0

Ready

16:20 0.0 0.0 0.0

Ready

0.0 0.1 0.1

Ready

0.0 0.1 0.1

Ready

16:21 0.1 0.1 0.1

230 Ready

0.0 0.1 0.1

Ready

0.0 0.1 0.1

Ready

0.0 0.1 0.0

Ready

16:22 0.0 0.0 0.1

Ready

BRYAN RESIDENCE
NO. WILLISTON ROAD
WILLISTON, VT
MAY 7, 1993

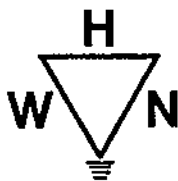
	0.0	0.0	0.1	Ready	_____
16:23	0.0	0.0	0.0	231 Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:24	0.0	0.0	0.0	232 Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:25	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:26	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:27	0.0	0.0	0.1	Ready	_____
	0.0	0.0	0.1	Ready	_____
	0.0	0.0	0.0	233 Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:28	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:29	0.0	0.0	0.0	234 Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:30	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:31	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	235 Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:32	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
	0.0	0.0	0.0	Ready	_____
16:33	0.0	0.0	0.0	Ready	_____

BRYAN RESIDENCE
 NO. WILLISTON ROAD
 WILLISTON, VT
 MAY 7, 1993

0.0	0.0	0.0	Ready	_____
0.0	0.0	0.1	Ready	_____
16:34	0.0	0.0	0.0	236 Ready _____
0.0	0.0	0.0	Ready	_____
0.0	0.0	0.0	Ready	_____
0.0	0.0	0.0	Ready	_____
16:35	0.0	0.0	0.0	Ready _____
0.0	0.0	0.0	Ready	_____
0.0	0.0	0.0	Ready	_____

LOCATION #2: BRYAN RESIDENCE, BASEMENT

17:25	0.0	0.0	0.0	237 Ready	_____
0.0	0.0	0.0	Ready	_____	
0.0	0.0	0.0	Ready	_____	
0.0	0.5	0.9	Ready	_____	
17:26	0.9	1.3	1.5	Ready	_____
1.0	1.2	1.4	238 Ready	_____	
0.7	0.9	1.0	Ready	_____	
17:27	0.6	0.6	0.7	240 Ready	_____
0.5	0.6	0.6	Ready	_____	
0.5	0.5	0.5	241 Ready	_____	
0.4	0.4	0.5	Ready	_____	
0.4	0.8	1.0	Ready	_____	
0.8	0.9	1.0	Ready	_____	
17:28	0.8	1.0	1.1	242 Ready	_____
1.1	1.3	1.3	Ready	_____	
0.9	1.0	1.2	Ready	_____	
0.6	0.8	0.9	Ready	_____	
17:29	0.6	0.9	1.0	Ready	_____
0.7	1.0	1.3	Ready	_____	
0.7	0.8	0.8	Ready	_____	
0.7	0.8	0.8	Ready	_____	
17:30	0.5	0.6	0.7	Ready	_____
0.5	0.6	0.6	Ready	_____	
0.6	0.8	1.1	Ready	_____	
17:31	0.6	0.8	1.0	243 Ready	_____
0.6	0.6	0.7	Ready	_____	
0.3	0.5	0.6	Ready	_____	



Wagner, Heindel, and Noyes, Inc.

Consulting Geologists

Burlington, Vermont

26

Page No.

PAGE ____ OF ____

PROJECT: BRYAN

DATE: 6-93

BRYAN RESIDENCE

SENSITIVE RECEPTOR SURVEY

INVENTORY OF DRILLER'S WELL LOGS WITHIN 24000'

ANR #	NAME	TOTAL DEPTH (FT)	DEPTH TO ROCK (FT)	YIELD (GPM)
12	GREEN MT. DEVEL.	30	>30	0
20	BEN MURRAY	395	?	12
86	MIKE MURRAY	172	52	10
132	MARSHALL HUNT	350	50	10
155	NANCY MAYEN	246	9	1/16
188	CHARLES CHRISTALINE JR.	300	65	TRACE
200	DAW PETHER BRIDGE	120	(GRAVEL)	150
205	MARCEL MONTAGNE	502	29	10
252	BEN MURRAY	502	220	5
301	JEFF DAVIS	600	78	2

13C5

State of Vermont
DEPARTMENT OF WATER RESOURCE

WR 12 USGS W5W20 27
Field Loc 12 Map Des 13C-5
La. 44° 27' 00" Alt 490 TS V
Lo. 73° 03' 34" [1] HU 02010003
Scale: 62500 [] , 25000 [] , 24000 [X]

WELL COMPLETION REPORT

(This report must be completed and submitted to the Department of Water Resources, State Office Building, Montpelier, Vermont 05602, no later than 30 days after completion of well.)

Do not fill in
State Well No. N-44° 26' 57"
Other No. W-73° 03' 50"

WELL OWNER Green Mountain Land Dev. Corp. 1/2 Webster Martin Eng'g 1025 Airport Dr. S. Burlington Vt.

WELL DRILLER Layne-New England Company
15 Ryder St., Arlington, Mass. 02174

PROPOSED USE OR USES (Check):

- ☐ Domestic ☐ Agricultural ☐ Business Establishment ☐ Municipal ☐ Industrial
- ☒ Other (Specify use) Test

CASTING DETAILS (Inside)	YIELD TEST	WATER LEVEL (From land surface) (if possible)	SCREEN DETAILS
Length: <u>Polled</u> Feet	<input type="checkbox"/> Bailed or <input type="checkbox"/> Pumped or <input type="checkbox"/> Compressed Air <div style="text-align: center; font-size: 1.5em;">No Water</div>	Static: <u>None</u> Feet	Make: <u>None</u>
Diameter: <u>2 1/2"</u> Inches		During Yield Test: Feet	Material:
Kind:		DRILLING EQUIPMENT	
Weight: lbs/p/ft		<input type="checkbox"/> Cable Tool <input type="checkbox"/> Rotary <input type="checkbox"/> Air Percussion <input checked="" type="checkbox"/> Other (specify) <u>Wash</u>	
<input type="checkbox"/> New <input type="checkbox"/> Used		Yield: GPM	Length: Ft.
			Diameter: in.

TOTAL DEPTH OF WELL 29' 10" FEET TOWN WELL IS LOCATED IN: WILLISTON
(Make sketch of well location on reverse side of sheet)

WELL LOG

Depth From Ground Surface	Give description of formations penetrated, such as: peat, silt, sand, gravel, clay, hardpan, shale, limestone, granite, etc. Include size of gravel (diameter) and sand (fine, medium, coarse) color of material, structure (loose, packed, cemented, hard). For example: 0 ft. to 27 ft. fine, packed, yellow sand; 27 ft. to 134 ft. gray granite.
0 ft. to 21'0 ft.	<u>Blue Clay Shale Stone</u>
21'0 ft. to 26'3 ft.	<u>Grey Stone Clay & Silt.</u>
26'3 ft. to 29'10" ft.	<u>Sharp Stone - Some Gravel & Silt.</u>
ft. to ft.	
ft. to ft.	

YIELD TEST DATA IN G.P.M.
If yield was tested at different depth during drilling,
List Below

ft.	<u>No Water</u>	G.P.M.
ft.		G.P.M.
ft.		G.P.M.

Has sample of well water been analyzed? No

Where was sample analyzed?
(Include analysis of sample if analyzed by other than Department of Water Resources.)

Date Well was Completed Nov 1, 1961 Date of Report Dec 26, 1961

Water Well Driller's License No. 32

Well Driller [Signature]
(signature)

One other hole drilled in area with same negative results

1305
State of Vermont
DEPARTMENT OF WATER RESOURCE

WR 20 USGS W5W26 28
Field Loc ☒ Map Des 13C-5
La. 44° 26' 13" Alt 525 TS T
Lo. 73° 03' 13" HU 02010003
Scale: 62500 ☐ 25000 ☐ 24000 ☒

WELL COMPLETION REPORT

(This report must be completed and submitted to the Department of Water Resources, State Office Building, Montpelier, Vermont 05602, no later than 30 days after completion of well.)

Do not fill in
State Well No. N 44° 26' 07"
Other No. W 73° 02' 48"

WELL OWNER Benjamin Murray Williston, VT.
Name Mailing Address
WELL DRILLER J.A. Guley & Sons Inc. Highgate, VT.
Name Mailing Address
PROPOSED USE OR USES (Check)
☒ Domestic ☐ Agricultural ☐ Business Establishment ☐ Municipal ☐ Industrial
☐ Other (Specify use)

CASTING DETAILS (Inside)	YIELD TEST		WATER LEVEL (From land surface) (if possible)	SCREEN DETAILS
Length: <u>191</u> Feet	<input type="checkbox"/> Bailed or <input type="checkbox"/> Pumped or <input checked="" type="checkbox"/> Compressed Air	Hours	Static: <u>10</u> Feet	Make:
Diameter: <u>6"</u> Inches		GPM	During Yield Test: _____ Feet	Material:
Kind: <u>Steel</u>		DRILLING EQUIPMENT		Slot Size
Weight: <u>19:45</u> lbs/p/ft		<input type="checkbox"/> Cable Tool <input checked="" type="checkbox"/> Rotary <input type="checkbox"/> Air Percussion <input type="checkbox"/> Other (specify)		Length: _____ Ft.
<input checked="" type="checkbox"/> New <input type="checkbox"/> Used	Yield: <u>12</u> GPM			Diameter: _____ in.

TOTAL DEPTH OF WELL 395 FEET TOWN WELL IS LOCATED IN: Williston
(Make sketch of well location on reverse side of sheet)

WELL LOG

Depth From Ground Surface	Give description of formations penetrated, such as: peat, silt, sand, gravel, clay, hardpan, shale, limestone, granite, etc. Include size of gravel (diameter) and sand (fine, medium, coarse) color of material, structure (loose, packed, cemented, hard). For example: 0 ft. to 27 ft. fine, packed, yellow sand; 27 ft. to 134 ft. gray granite.
<u>0</u> ft. to <u>180</u> ft.	<u>Sand, clay - hardpan - boulders</u>
<u>180</u> ft. to <u>395</u> ft.	<u>Vertical rock - green</u>
ft. to ft.	
ft. to ft.	
ft. to ft.	

YIELD TEST DATA IN G.P.M.
If yield was tested at different depth during drilling, List Below

ft.	G.P.M.
ft.	G.P.M.
ft.	G.P.M.

Has sample of well water been analyzed?

Where was sample analyzed?
(Include analysis of sample if analyzed by other than Department of Water Resources.)

Date Well was Completed 5-1-67

Date of Report 5-2-67

Water Well Driller's License No. 18

Well Driller

J.A. Guley & Sons Inc.
J.W. Guley

WELL NUMBER

38
(For Driller's Use)

State of Vermont

DEPARTMENT OF WATER RESOURCE

WELL COMPLETION REPORT

(This report must be completed and submitted to the Department of Water Resources, State Office Building, Montpelier, Vermont 05602, no later than 60 days after completion of well. Complete or line out all blanks.)

AUG 20 1976

DO NOT FILL IN

#86

WR 86 USGS WSW 76
Field Loc ☒ Map Des 13C-6
La. 44°27'20" Alt 510 TSU
Lo. 73°03'16" ☒ HU 02010003
Scale: 62500 ☐, 25000 ☐, 24000 ☒

WELL

OWNER Mike Murray RFD Williston, VT.
Name Mailing Address

TOWN IN WHICH WELL IS LOCATED: Same

(Please locate well on a large scale map to accompany this report. Maps are available on request.)

DATE WELL WAS COMPLETED: 4/26/76

PROPOSED USE OF WELL:

☒ Domestic ☐ Agricultural ☐ Business Establishment
☐ Municipal ☐ Industrial ☐ Other (Specify)
☐ Cable Tool ☐ Rotary ☒ Air Percussion
☐ Other (Specify)

DRILLING EQUIPMENT:

TOTAL DEPTH OF WELL: 172

STATIC WATER

CASING DETAILS: Length 57 ft. Diameter 6 in. Material Steel
Weight 19.45 lb./ft.

SCREEN DETAILS: Make Material Length ft.
Diameter in. Slot Size

METHOD OF SEALING CASING TO SCREEN OR BEDROCK: Butler Larkin Well Seal

FINAL YIELD TEST: ☐ Bailed, or ☐ Pumped, or ☒ Compressed Air
1 Hours at 10 gallons per minute
Water level during yield test

WELL LOG

Depth From
Ground Surface

Give description of formations penetrated, such as: peat, silt, sand, gravel, clay, hardpan, shale, limestone, granite, etc. Include size of gravel (diameter) and sand (fine, medium, coarse, color of material, structure (loose, packed, cemented, hard). For example: Surface to 27 ft. fine, packed, yellow sand; to 134 ft. gray granite.

Surface to 52 ft. hardpan
52 to 75 ft. brown bedrock
75 to 172 ft. gray + brown bedrock
to ft.
to ft.

YIELD TEST DATA IN G.P.M.

If yield was tested at different depth during drilling,
List Below

G.P.M.

G.P.M.

G.P.M.

WATER ANALYSIS: Has water been analyzed? ☐ Yes ☒ No If Yes, Where
Include Analysis

DRILLED BY: Ha Manosh

Signature

DOING BUSINESS AS: Ha Manosh Corp

Company

DATE OF REPORT: MAY 6 1976

WELL DRILLERS LICENSE NO.

WELL NUMBER

Form WR-59
Rev. 7-22

(For Driller's Use)

State of Vermont
DEPARTMENT OF WATER RESOURCES

WELL COMPLETION REPORT

OCT 10 1979

DO NOT FILL IN

(This report must be completed and submitted to the Department of Water Resources, State Office Building, Montpelier, Vermont 05602, no later than 60 days after completion of well. Complete or line out all blanks.)

132

WELL OWNER Moskell Hunt Williston VT
Name Mailing Address

TOWN IN WHICH WELL IS LOCATED: Williston (Please locate well on a large scale map to accompany this report. Maps are available on request.)

DATE WELL WAS COMPLETED: 8/9/79

PROPOSED USE OF WELL: ☒ Domestic ☐ Agricultural ☐ Business Establishment
☐ Municipal ☐ Industrial ☐ Other (Specify)

DRILLING EQUIPMENT: ☐ Cable Tool ☐ Rotary ☒ Air Percussion
☐ Other (Specify)

TOTAL DEPTH OF WELL: 350 STATIC WATER 40 FT

CASING DETAILS: Length 60 ft. Diameter 6 in. Material Steel
Weight 20 lb./ft.

SCREEN DETAILS: Make _____ Material _____ Length _____ ft.
Diameter _____ in. Slot Size _____

METHOD OF SEALING CASING TO SCREEN OR BEDROCK: Drushed

FINAL YIELD TEST: ☐ Bailed, or ☐ Pumped, or ☒ Compressed Air
1 Hours at 10 gallons per minute

Water level during yield test 310

WELL LOG

Depth From

Ground Surface

Give description of formations penetrated, such as: peat, silt, sand, gravel, clay, hardpan, shale, limestone, granite, etc. Include size of gravel (diameter) and sand (fine, medium, coarse, color of material, structure (loose, packed, cemented, hard). For example: Surface to 27 ft. fine, packed, yellow sand; 27 ft. to 134 ft. gray granite.

Surface to 50 ft. clay
50 to 350 ft. slate blsp.
to ft.
to ft.

YIELD TEST DATA IN G.P.M.

If yield was tested at different depths during drilling, List Below

<u>10</u> G.P.M. @ <u>350</u> ft.	G.P.M. @ ft.
G.P.M. @ ft.	G.P.M. @ ft.

WATER ANALYSIS: Has water been analyzed? ☐ Yes ☐ No If Yes, Where _____
Include Analysis

DRILLED BY: J. Pofford & Son Russell
Signature

DOING BUSINESS AS: _____ Company

DATE OF REPORT: 8/9/79 WELL DRILLERS LICENSE NO. 42

2151
(For Driller's Use)

DEPARTMENT OF WATER RESOURCES
AND ENVIRONMENTAL ENGINEERING
WELL COMPLETION REPORT

This report must be completed and submitted to the Department of Water Resources and Environmental Engineering, State Office Building, Montpelier, Vermont 05602, not later than 60 days after completion of the well.

W.R. 155 U.S.G.S.
Field Location ☐ Map area 13C5
Latitude ° ' " Elev.
Longitude ° ' " Topo.
Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐
Data in Town Files ☐

Location map attached to WCR

1. WELL OWNER Nancy Mayer OR WELL PURCHASER
Name Permanent Mailing Address
2. LOCATION OF WELL: TOWN Same SUBDIVISION LOT NO.
3. DATE WELL WAS COMPLETED 5/20/81
4. PROPOSED USE OF WELL: ☒ Domestic, ☐ Other
5. REASON FOR DRILLING WELL: ☐ New Supply, ☒ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,
☐ Provide Additional Supply, ☐ Other
6. DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-P, ☐ Other
7. TYPE OF WELL: ☒ Open Hole in Bedrock, ☐ Open End Casing, ☐ Screened or Slotted; ☐ Other
8. TOTAL DEPTH OF WELL: 746 Feet below land surface.
9. CASING FINISH: ☒ Above ground, Finished, ☐ Above ground, Unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other
10. CASING DETAILS: Total length 20 ft. Length below L.S. 18 ft. Dia. 6 in. Material Steel Wt. lb./ft.
11. LINER OR INNER CASING DETAILS: Length used ft. Diameter in. Material Weight lb./ft.
12. METHOD OF SEALING CASING TO BEDROCK: ☒ Drive Shoe, ☐ Grout - type , Drilled in. hole ft. in Bedrock
☐ Other
13. SCREEN DETAILS: Make and Type , Material , Length ft., Diameter in.,
Slot Size , Depth to top of screen in feet below land surface ft., Gravel pack if used: Gravel Size or Type
14. YIELD TEST: ☐ Boiled, ☐ Pumped, ☒ Compressed Air, for 1 Hours at 1 Cup Gallons per minute
Measured by ☒ Bucket, ☐ Orifice pipe, ☐ Wier, ☐ Meter ☐ Permanent Airline installed
15. STATIC WATER LEVEL: feet below land surface, Date or Time measured , Overflows at G.P.M.
16. WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☒ No, If Yes, Where
17. SPECIAL NOTES:
18. WELL LOG

19. SITE MAP

Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.

N
↑

Depth from Land Surface		Water Bearing	Formation Description	Sketch
Feet	Feet			
Ground Surface	<u>9</u>		<u>Dark Gray</u>	
<u>9</u>	<u>746</u>	<input checked="" type="checkbox"/>		

06, Green, T.S.

20. TESTED YIELD

If the yield was tested at different depths during drilling, list below

Feet	Gallons Per Minute

WELL DRILLED BY: H A ManovichDOING BUSINESS AS: H A Manovich Corp.
Company or Business NameREPORT FILED BY:
Authorized SignatureDATE OF REPORT: 6/2/81 WELL DRILLERS LIC. NO. 8

67-84

(For Driller's Use)

This report must be completed and submitted to the Department of Water Resources and Environmental Engineering, State Office Building, Montpelier, Vermont 05602, no later than 60 days after completion of the well.

DEPARTMENT OF WATER RESOURCES
AND ENVIRONMENTAL ENGINEERING
WELL COMPLETION REPORT

SEP 12 1984

Location map attached to WCR

W.R. 188 U.S.G.S.
Field Location ☐ Map area 13 c. 5
Latitude ☐ " Elev. ☐
Longitude ☐ " Topo. ☐
Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐
Data in Town Files ☐

1. WELL OWNER C.C. Construction
OR
WELL PURCHASER Charles Christoline Jr. RD 1 Box 1480 Sheldon
Name Permanent Mailing Address
2. LOCATION OF WELL: TOWN Williston SUBDIVISION _____ LOT NO. _____
3. DATE WELL WAS COMPLETED Sept 5/14/84
4. PROPOSED USE OF WELL: ☒ Domestic, ☐ Other _____
5. REASON FOR DRILLING WELL: ☒ New Supply, ☐ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,
☐ Provide Additional Supply, ☐ Other _____
6. DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-P, ☐ Other _____
7. TYPE OF WELL: ☐ Open Hole in Bedrock, ☒ Open End Casing, ☐ Screened or Slotted, ☐ Other _____
8. TOTAL DEPTH OF WELL: 300' feet below land surface.
9. CASING FINISH: ☐ Above ground, Finished, ☒ Above ground, Unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other _____
10. CASING DETAILS: Total length 76' ft. Length below L.S. 74 1/2' ft. Dia. 6" In. Material API Wt. 19.45 lb./ft.
11. LINER OR INNER CASING DETAILS: Length used _____ ft. Diameter _____ In. Material _____ Weight _____ lb./ft.
12. METHOD OF SEALING CASING TO BEDROCK: ☒ Drive Shoe, ☐ Grout - type _____, Drilled _____ in. hole _____ ft. in Bedrock
☐ Other _____
13. SCREEN DETAILS: Make and Type _____, Material _____, Length _____ ft., Diameter _____ in.,
Slot Size _____, Depth to top of screen in feet below land surface _____ ft., Gravel pack if used: Gravel Size or Type _____
14. YIELD TEST: ☐ Bailed, ☐ Pumped, ☒ Compressed Air, for _____ Hours at 34 gpm Gallons per minute
Measured by ☒ Bucket, ☐ Orifice pipe, ☐ Wier, ☐ Meter ☐ Permanent Airline installed
15. STATIC WATER LEVEL: _____ feet below land surface, Date or Time measured _____, Overflows at _____ G.P.M.
16. WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☒ No, if Yes, Where _____
17. SPECIAL NOTES: _____
18. WELL LOG

Depth from Land Surface		Water Bearing	Formation Description	Sketch
Feet	Feet			
Ground Surface	50		gravel	
50	65		clay	
65	300		bedrock	

19. SITE MAP

Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.

24, TW, 67M

20. TESTED YIELD

If the yield was tested at different depths during drilling, list below.

Feet	Gallons Per Minute

WELL DRILLED BY: _____

DOING BUSINESS AS: Northeast Well Drilling
Company or Business Name Inc.REPORT FILED BY: _____
Authorized Signature

DATE OF REPORT: _____

WELL DRILLERS LIC. NO. 115

I-10

(For Driller's Use)

This report must be completed and submitted to the Department of Water Resources and Environmental Engineering, State Office Building, Montpelier, Vermont 05602, no later than 60 days after completion of the well.

DEPARTMENT OF WATER RESOURCES
AND ENVIRONMENTAL ENGINEERING
WELL COMPLETION REPORT

W.R. 200 U.S.G.S. 13C5
Field Location ☐ Map area 13C5
Latitude _____ " Elev. _____
Longitude _____ " Topo. _____
Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐
Data in Town Files ☐

OCT 19 1984
Location map attached to WCR

1. WELL OWNER Dan Petherbridge South St. Williston
OR
WELL PURCHASER _____
Name _____ Permanent Mailing Address _____

2. LOCATION OF WELL: TOWN Williston Vt. SUBDIVISION _____ LOT NO. _____

3. DATE WELL WAS COMPLETED 8/28/84

4. PROPOSED USE OF WELL: ☒ Domestic, ☐ Other _____

5. REASON FOR DRILLING WELL: ☐ New Supply, ☒ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,

☐ Provide Additional Supply, ☐ Other _____

6. DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-P, ☐ Other _____

7. TYPE OF WELL: ☒ Open Hole in Bedrock, ☒ Open End Casing, ☐ Screened or Slotted, ☐ Other _____

8. TOTAL DEPTH OF WELL: 120 feet below land surface.

9. CASING FINISH: ☒ Above ground, Finished, ☐ Above ground, Unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other _____

10. CASING DETAILS: Total length 120 ft. Length below L.S. 118 1/2 ft. Dia. 6 in. Material Steel Wt. 19 lb./ft.

11. LINER OR INNER CASING DETAILS: Length used _____ ft. Diameter _____ in. Material _____ Weight _____ lb./ft.

12. METHOD OF SEALING CASING TO BEDROCK: ☒ Drive Shoes, ☐ Grout - type _____, Drilled _____ in. hole _____ ft. in Bedrock

☐ Other _____

13. SCREEN DETAILS: Make and Type _____, Material _____, Length _____ ft., Diameter _____ in.,

Slot Size _____, Depth to top of screen in feet below land surface _____ ft., Gravel pack if used: Gravel Size or Type _____

14. YIELD TEST: ☐ Bailed, ☐ Pumped, ☒ Compressed Air, for 1 Hours at 150 Gallons per minute

Measured by ☒ Bucket, ☐ Orifice pipe, ☐ Wier, ☐ Meter

☐ Permanent Airline Installed

15. STATIC WATER LEVEL: _____ feet below land surface, Date or Time measured _____, Overflows at _____ G.P.M.

16. WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☐ No, If Yes, Where _____

17. SPECIAL NOTES: _____

18. WELL LOG well owner reports well overflows 10-15 GPM 9/17/85 JWA

Depth from Land Surface		Water Bearing	Formation Description	Sketch
Feet	Feet			
Ground Surface	<u>70</u>		<u>HARD PAN</u>	
<u>70</u>	<u>110</u>		<u>QUICK SAND</u>	
<u>110</u>	<u>120</u>		<u>COARSE GRAVEL</u>	

19. SITE MAP
Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.

on Back

Spafford & Son's of Williston, Vt. Inc.
Thomas Williams
P.O. Box 101

20. TESTED YIELD

If the yield was tested at different depths during drilling, list below.

Feet	Gallons Per Minute

WELL DRILLED BY: _____

DOING BUSINESS AS: _____

REPORT FILED BY: _____

DATE OF REPORT: 8/28/84

Williston, Vt. 05495

Tel: (802) 878-4705

Company or Business Name

Authorized Signature

WELL DRILLERS LIC. NO. 198

2936

(For Driller's Use)

This report must be completed and submitted to the Department of Water Resources and Environmental Engineering, State Office Building, Montpelier, Vermont 05602, no later than 60 days after completion of the well.

DEPARTMENT OF WATER RESOURCES AND ENVIRONMENTAL ENGINEERING WELL COMPLETION REPORT

SEP 16 1985

Location map attached to WCR

W.R. 205 U.S.G.S. 13C5
Field Location ☐ Map area 13C5
Latitude _____ " Elev. _____
Longitude _____ " Topo. _____
Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐
Data in Town Files ☐

1. WELL OWNER Marcel Montagne Box 79 Williston, VT 05495
OR
WELL PURCHASER _____
Name _____ Permanent Mailing Address _____
2. LOCATION OF WELL: TOWN Williston SUBDIVISION _____ LOT NO. _____
3. DATE WELL WAS COMPLETED 4 June 85
4. PROPOSED USE OF WELL: ☒ Domestic, ☐ Other _____
5. REASON FOR DRILLING WELL: ☐ New Supply, ☒ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,
☐ Provide Additional Supply, ☐ Other _____
6. DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-P, ☐ Other _____
7. TYPE OF WELL: ☒ Open Hole in Bedrock, ☐ Open End Casing, ☐ Screened or Slotted, ☐ Other _____
8. TOTAL DEPTH OF WELL: 502 feet below land surface.
9. CASING FINISH: ☒ Above ground, Finished, ☐ Above ground, Unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other _____
10. CASING DETAILS: Total length 34 ft. Length below L.S. 33 ft. Dia. 6 in. Material steel Wt. 19 lb./ft.
11. LINER OR INNER CASING DETAILS: Length used _____ ft. Diameter _____ in. Material _____ Weight _____ lb./ft.
12. METHOD OF SEALING CASING TO BEDROCK: ☒ Drive Shoe, ☐ Grout - type _____, Drilled 3 3/4 in. hole 4 ft. in Bedrock
☐ Other Casing driven into bedrock
13. SCREEN DETAILS: Make and Type _____, Material _____, Length _____ ft., Diameter _____ in.,
Slot Size _____, Depth to top of screen in feet below land surface _____ ft., Gravel pack if used: Gravel Size or Type _____
14. YIELD TEST: ☐ Boiled, ☐ Pumped, ☒ Compressed Air, for 5 Hours at 10 Gallons per minute
Measured by ☒ Bucket, ☐ Orifice pipe, ☐ Wier, ☐ Meter ☐ Permanent Airline installed
15. STATIC WATER LEVEL: _____ feet below land surface, Date or Time measured _____, Overflows at _____ G.P.M.
16. WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☐ No, If Yes, Where _____
17. SPECIAL NOTES: _____
18. WELL LOG

Depth from Land Surface		Water Bearing	Formation Description	Sketch
Feet	Feet			
Ground Surface	29		Clay + Gravel	
29	502		Soft Green schist	

19. SITE MAP

Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.

20. TESTED YIELD

If the yield was tested at different depths during drilling, list below.

Feet	Gallons Per Minute

WELL DRILLED BY: David CherashDOING BUSINESS AS: Cherash Drilling Co.
Company or Business NameREPORT FILED BY: David Cherash
Authorized SignatureDATE OF REPORT: 4 June 85 WELL DRILLERS LIC. NO. 36

WELL NO. / TAG NO.

20 / 35A

(For Driller's Use)

This report must be completed and submitted to the Department of Environmental Conservation 103 South Main Street (10N), Waterbury, VT. 05676 no later than 60 days after completion of the well.

State of Vermont
Dept. of Environmental Conservation
103 South Main Street (10N)
Waterbury, VT. 05676
WELL COMPLETION REPORT

MAR 23 1988

Location map attached to WCR 251

DEPARTMENT USE ONLY

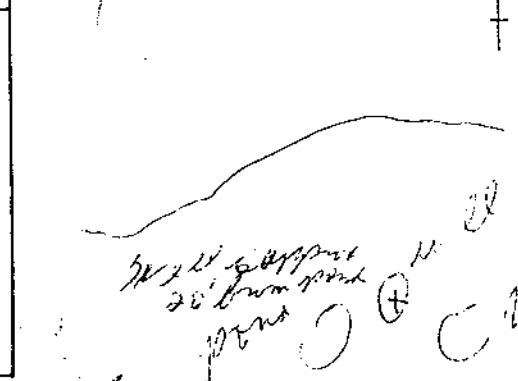
E.C. 252 U.S.G.S.
Field Location ☐ Map area 13C5
Latitude _____ Elev. _____
Longitude _____ Topo. _____
Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐
Data in Town Files ☐

1. WELL OWNER Ben Murray Box 541, Williston VT 05495
OR
WELL PURCHASER _____
2. LOCATION OF WELL: TOWN Williston SUBDIVISION _____ LOT NO. _____
3. DATE WELL WAS COMPLETED 3 Feb 88
4. PROPOSED USE OF WELL: ☐ Domestic, ☐ Other Irrigation
5. REASON FOR DRILLING WELL: ☐ New Supply, ☐ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,
☒ Provide Additional Supply, ☐ Other _____
6. DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-P, ☐ Other _____
7. TYPE OF WELL: ☒ Open Hole in Bedrock, ☐ Open End Casing, ☐ Screened or Slotted; ☐ Other _____
8. TOTAL DEPTH OF WELL: 502 feet below land surface.
9. CASING FINISH: ☒ Above ground, Finished, ☐ Above ground, Unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other _____
10. CASING DETAILS: Total length 222 ft. Length below L.S. 220 ft. Dia. 6 in. Material steel Wt. 19 lb./ft.
11. LINER OR INNER CASING DETAILS: Length used _____ ft. Diameter _____ in. Material _____ Weight _____ lb./ft.
12. METHOD OF SEALING CASING TO BEDROCK: ☒ Drive Shoe, ☐ Grout - type _____, Drilled _____ in. hole _____ ft. in Bedrock
☐ Other Casing driven into rock
13. SCREEN DETAILS: Make and Type _____, Material _____, Length _____ ft., Diameter _____ in.,
Slot Size _____, Depth to top of screen in feet below land surface _____ ft., Gravel pack if used: Gravel Size or Type _____
14. YIELD TEST: ☐ Bailed, ☐ Pumped, ☒ Compressed Air, for 5 Hours at 5 Gallons per minute
Measured by ☐ Bucket, ☐ Orifice pipe, ☐ Wier, ☐ Meter ☐ Permanent Airline installed
15. STATIC WATER LEVEL: _____ feet below land surface, Date or Time measured _____, Overflows at _____ G.P.M.
16. WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☐ No, If Yes, Where _____
17. SPECIAL NOTES: _____
18. WELL LOG

Depth from Land Surface		Water Bearing	Formation Description	Sketch
Feet	Feet			
Ground Surface	25		Fine Sand	
25	220		Hard Packed Till + gravel	
			Gravel	
220	502		Schist	

19. SITE MAP

Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.



20. TESTED YIELD

If the yield was tested at different depths during drilling, list below.

Feet	Gallons Per Minute

WELL DRILLED BY: Ward Church
DOING BUSINESS AS: Church Drilling Co
REPORT FILED BY: Ward Church
DATE OF REPORT: 3 Feb 88 WELL DRILLERS LIC. NO. 36

WELL NO. / TAG NO.

8-129

(For Driller's Use)

This report must be completed and submitted to the Department of Environmental Conservation 103 South Main Street (10N), Waterbury, VT 05676 no later than 60 days after completion of the well.

State of Vermont
Dept. of Environmental Conservation
103 South Main Street (10N)
Waterbury, VT. 05676
WELL COMPLETION REPORT

JUL 20 1990

Location map attached to WCR

DEPARTMENT USE ONLY

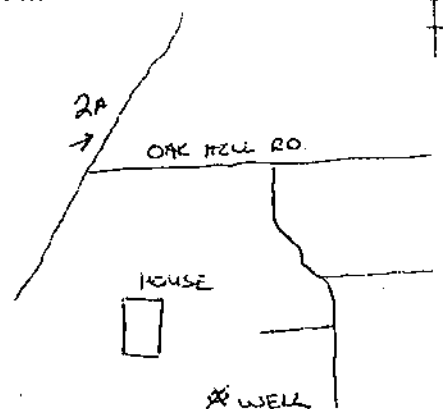
E.C. 301 U.S.G.S. _____
Field Location ☐ Map area 13C5
Latitude _____ Elev. _____
Longitude _____ Topo. _____
Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐
Data in Town Files ☐

- 1 WELL OWNER JEFF DAVES RT 1 Box 647 Fox Hill Lane Cambridge VT
OR 2 FiveTree Williston 05495
WELL PURCHASER 05444
Name Permanent Mailing Address
- 2 LOCATION OF WELL: TOWN WILLISTON SUBDIVISION _____ LOT NO. _____
- 3 DATE WELL WAS COMPLETED 7/12/90
- 4 PROPOSED USE OF WELL: ☒ Domestic, ☐ Other _____
- 5 REASON FOR DRILLING WELL: ☒ New Supply, ☐ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,
☐ Provide Additional Supply, ☐ Other _____
- 6 DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-P, ☐ Other _____
- 7 TYPE OF WELL: ☒ Open Hole in Bedrock, ☐ Open End Casing, ☐ Screened or Slotted, ☐ Other _____
- 8 TOTAL DEPTH OF WELL: 600' feet below land surface.
- 9 CASING FINISH: ☒ Above ground, Finished, ☐ Above ground, Unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other _____
- 10 CASING DETAILS: Total length 100' ft Length below L.S. 98' ft Dia. 6" in Material STEEL Wt. 17 lb./ft
- 11 LINER OR INNER CASING DETAILS: Length used 600' ft Diameter 4" in Material PVC weight 40 lb./ft
- 12 METHOD OF SEALING CASING TO BEDROCK: ☒ Drive Shoe, ☐ Grout - Type _____, Drilled 2" in hole 20' ft in Bedrock
☐ Other _____
- 13 SCREEN DETAILS: Make and Type _____, Material _____, Length _____ ft, Diameter _____ in,
Slot Size _____, Depth to top of screen in feet below land surface _____ ft, Gravel pack if used Gravel Size or Type _____
- 14 YIELD TEST: ☐ Boiled, ☐ Pumped, ☒ Compressed Air, for 1 Hours at 2 Gallons per minute
Measured by ☒ Bucket, ☐ Orifice pipe, ☐ Wier, ☐ Meter ☐ Permanent Airline installed
- 15 STATIC WATER LEVEL: 50' feet below land surface, Date or Time measured _____, Overflows at _____ G.P.M.
- 16 WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☐ No, If Yes, Where _____
- 17 SPECIAL NOTES: WELL WAS HYDRO-FRACED AT 120' AND 300' IMPROVED YIELD FROM 1702
38'
- 18 WELL LOG STATIC LEVEL UP FROM 300' - 50'

Depth from Land Surface	Water Bearing	Formation Description	Sketch
Feet	Feet		
Ground Surface	15'	NO LIGHT BKN SANDY SOIL	
15'	78'	NO LIGHT GREY CLAY SMALL GRAVELS	
78'	600'	YES LIGHT GREY SOFT SHALE	

19. SITE MAP

Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.



20 TESTED YIELD

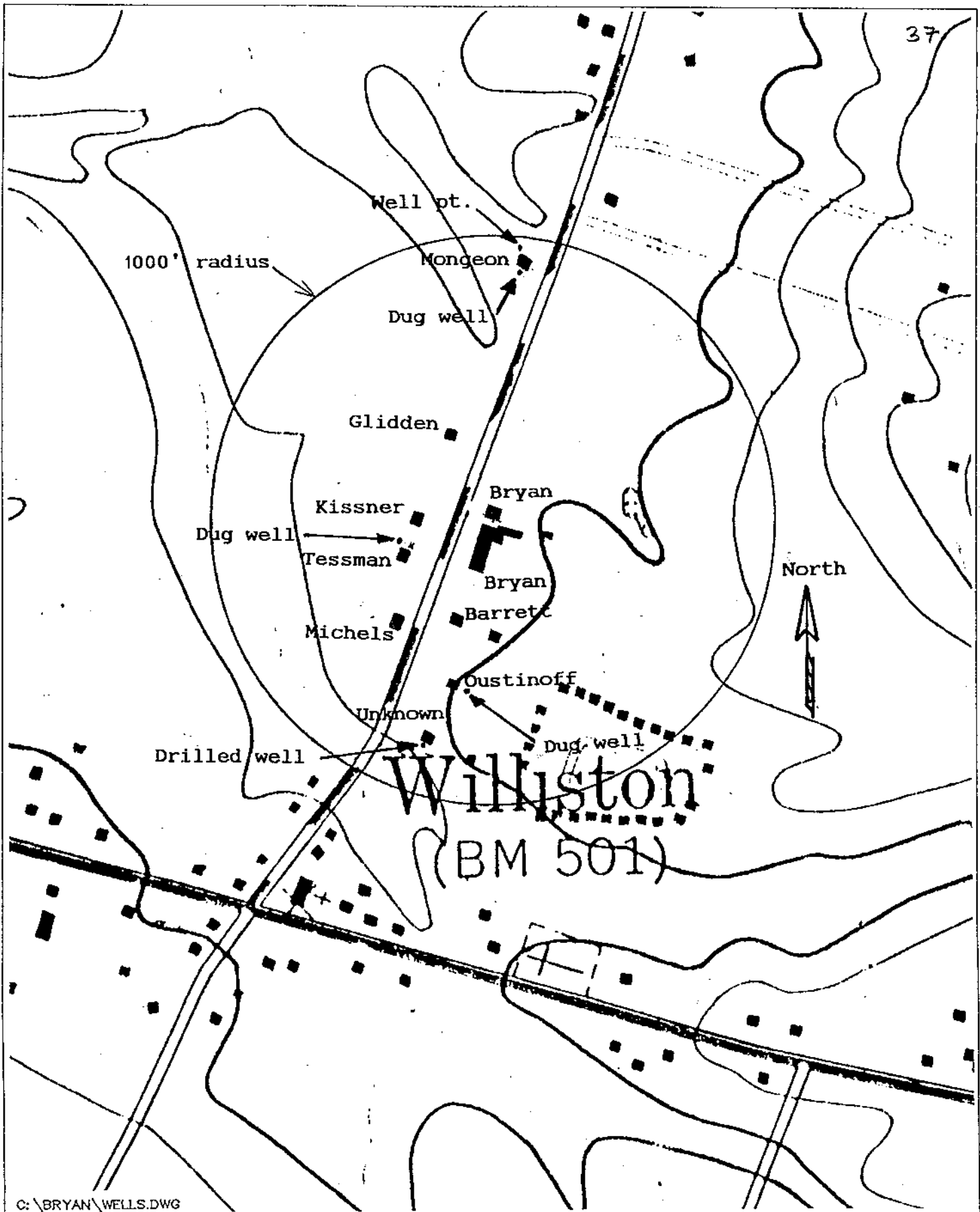
Feet	Gallons Per Minute
260'	1
600'	"
AFTER HYDRO	
FRAC 600'	2

WELL DRILLED BY: MARK KOENIG

DOING BUSINESS AS: FROST WELL DRILLING
Company or Business Name

REPORT FILED BY: [Signature]
Authorized Signature

DATE OF REPORT: 7/16/90 WELL DRILLERS LIC. NO. 23



C:\BRYAN\WELLS.DWG



Wagner, Heindel, and Noyes

CONSULTING SCIENTISTS AND ENGINEERS

- Hydrogeology • Ecology •
- Environmental Engineering •

BURLINGTON, VERMONT

BRYAN RESIDENCE

WILLISTON,

VERMONT

SENSITIVE RECEPTOR MAP

NORTH WILLISTON ROAD

DATE: 6/30/93

SCALE:

1"=453'

DRN:

MRL

APPD: MRM

Bryan Residence
Sensitive Receptor Survey
May 7-18, 1993
Homeowner Well Survey

Residence: Rick Barrett
Current Water Supply: Champlain Water District
Well Type: Dug well
Total Depth: Unknown
Installed to Bedrock: -
Yield: Unknown
Date installed: Prior to mid 1960s
Person/Company who installed well: Unknown
Person contacted: Beth Barrett
Additional notes: Mrs. Haines owned house before Barrett's;
Original owner: One of Talcott's children; the dug well is located
in the basement of the residence; the basement of the house remains
fairly dry except in the Spring.

Rick Barrett second well (?):
An old concrete cistern is located behind (East of) the house, on
the south side of the barn. It was formerly a windmill. An old
pump is located beside the cistern. The area flows in the Spring.
It now contains a lot of sediment.

Residence: Sandra and Richard Glidden
Current Water Supply: Champlain Water District
Well Type: None that are aware of.
Total Depth: N/A
Installed to Bedrock: N/A
Yield: N/A
Date installed: N/A
Person/Company who installed well: N/A
Person contacted: Sandra Glidden
Additional notes: Previous owner Frank Talcott (?); The Glidden's
moved in 1981. They have always been on town water.

Residence: Jean Kissner
Current Water Supply: Champlain Water District
Well Type: May have been well, does not know.
Total Depth: ?
Installed to Bedrock: ?
Yield: ?
Date installed: ?
Person/Company who installed well: ?
Person contacted: Jean Kissner
Additional notes: JK moved in October, 1989; Previous owner was
O'Shaugnessy (maiden name Johnson, daughter of Ward Johnson)

Residence: Clifford Michels
Current Water Supply: Champlain Water District
Well Type: Dug well
Old steel point at one time.
Total Depth: Approx. 5 ft deep tile
Installed to Bedrock: -
Yield: Unknown
Date installed: Present when CM moved in (1976)
House built a little over 100 yrs ago.
Person/Company who installed well:
Person contacted: C. Michels
Additional notes: Michels' used for a few years;
Well went dry one summer.

Residence: Lawrence Mongeon
Current Water Supply: Champlain Water District
Well Type: Steel well point
Total Depth: 40 ft
Installed to Bedrock: No
Yield: Unknown
Date installed: Circa 1945
Person/Company who installed well: Previous owner: Miles, deceased
(?)
Person contacted: L. Mongeon
Additional notes: Point is in layer of sand; never went dry,
located approx. 10 ft NW of NW corner of residence; conduit to
cellar still in place.

Mongeon well #2

Lawrence Mongeon indicated that the previous owners informed him that there was a second well on the property. It was located approximately 20 ft south of the middle of the residence. A depression marks its location. Apparently this well was buried when the well point was installed by Miles circa 1945.

Residence: Peter Oustinoff
 Current Water Supply: Champlain Water District
 Well Type: Dug well
 Total Depth: Unknown
 Installed to Bedrock: -
 Yield: Unknown
 Date installed: Unknown; Believes house built approx. 1953 or 1955.
 Person/Company who installed well: Unknown
 Person contacted: Anonymous tenant
 Additional notes: Well located approx. 40 ft east of house; conduit to house, but not turned on; concrete blocks as wellhead.

Residence: Jim Tessman
 Current Water Supply: Champlain Water District
 Well Type: Dug well
 Total Depth: 16 ft
 Installed to Bedrock: No
 Yield: Unknown
 Date installed: House built 1850-60
 Person/Company who installed well: Original owner?: Thomas Lee
 Person contacted: J. Tessman
 Additional notes: Never went dry; held approx. 4 ft of water.

Note:

The following three wells are located on the Williston Country Club golf course:

Map
 #
 (2)
 Residence: Williston Country Club clubhouse
 Current Water Supply: Drilled Well
 Well Type: Drilled Well
 Total Depth: 290-300 ft
 Installed to Bedrock: Yes, maybe 1/2 way.
 Yield: 25-30 gpm
 Date installed: Early 1960s
 Person/Company who installed well: Manosh (?)

Person contacted: Jeff Murray/Larry Keith
 Additional notes: Also supplies a couple of private homeowners near the country club.

Map #

①
 Residence: Irrigation well (golf course only)
 Current Water Supply: Drilled Well
 Well Type: Drilled Well
 Total Depth: 480-490 ft
 Installed to Bedrock: -
 Yield: 25 gpm
 Date installed: Circa 1988
 Person/Company who installed well: Chevalier
 Person contacted: Jeff Murray/Larry Keith
 Additional notes: Shale at 200 ft bgs; has tag number, is registered.

Map #

③
 Residence: Ben Murray
 Current Water Supply: Drilled Well
 Well Type: Drilled Well
 Total Depth: 295 or 300 ft
 Installed to Bedrock: -
 Yield: 10-15 gpm
 Date installed: early 1960s, year or two after Clubhouse well was drilled.
 Person/Company who installed well: Manosh (?), out of Morrisville
 Person contacted: Jeff Murray
 Additional notes: Ben Murray is original owner; well located on golf course; basically runs the house; may have tag number now